

SPORTOPEDIA

SECV3104 – Application Development

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1 INTRODUCTION

1.1 EXECUTIVE SUMMARY

Sportopedia is a platform that helps users to book to use any sport court easily. This app is targeted at the users to have an effective court booking application. Having a booking application can increase staff productivity as they can spend their time more on doing other tasks such as managing the sport hall.

With interesting and simple UI/UX design, Sportopedia delivers the best user experience by saving their time to book a court at the sport hall. This is better than them having to book manually at the sport hall or through messages that are less efficient. Addition to the time saving application, users can browse categories for the needed court for their sports, and start booking easily. Secondly, users will have instant visibility to court availability following the date and time slots. Hence, they will be able to book as in their schedule and this will help in preventing a clash booking. At their fingertips, users are able to manage booking when they need and track the booking if they ever forget about their future booking. Last but not least, users may register themselves as members of the sport hall on the application. To increase members satisfaction, they can collect points as rewards every time a booking is made. This will be converted to discount offers for the members for their next booking at the court.

By using Sportopedia, the users will be happy to have an effective court booking application in place for the sport hall. The users including the members are given the ability to book their court and saves everyone's time and also frustration. By using an effective application, users will have their best user experience and will come back to use it in the future as well.

1.2 PROBLEM STATEMENT

Since the past few decades, sports and recreational activities have always been the go to interest among the majority of individuals in the world. Even in our nation, sports are like the one thing that bonds us together. But with the advancement of technology, people have been more reluctant in engaging in this type of activity. With the availability of social media platforms and high speed internet almost everywhere, we have been attached to our devices almost all the time. But also because of the emergence of these technologies, sports utilities are becoming more accessible throughout the country through online promotion and advertisements.

So, we as a team have come up with an idea of providing an application that allows everyone to book sports facilities, for our case, sports court, in their nearby area without having to rely on the old style of booking. According to most people, the way of booking these courts is still old-fashioned. The way of booking is either through walk-in or by ordering through Whatsapp/Telegram. We found out that these methods are not only ineffective but also time consuming. The staff from the court center need to record from the customer the desired date, and then also record it in another storage system. This kind of management has a high possibility of mistakes during recording such as the overlapping of date or unavailable court being booked.

Additionally, people have become more accustomed to the availability of an application to order or book for something. Take Shopee and Foodpanda for instance. These applications have become bigger in the past few years because of how easily accessible it is. We think that by providing such a system will allow more people to enjoy sports again. Most people want to do sports but do not want to go through the hassle of contacting someone just to book a facility. Moreover, the availability of a system will also allow them to look for available spots simply by browsing, which will consume less time. Not forgetting that it is also easier to keep track of every record thus returning higher productivity.

For that reason, it might be really helpful to the community if this type of platform exists more. With this application, hopefully more people will consider taking up sports as a hobby and creating a healthier lifestyle for all.

1.3 GOALS

Our main goal is to develop an user friendly application that helps customers of the sports court to book. With the systematic application, customers can also easily browse sport categories, manage and track booking. Also, they can register as members and collect points as rewards.

The following are the expected goals that would be considered as successful if the prototype achieved these features:

- Register member
- Login System
- Browse sport categories
- Manage booking
- Show availability of courts
- Tracking booking
- Reward system (discount on certain points collection)
- Logout

1.4 OBJECTIVES

The objectives for this project are:

- To encourage more people to enjoy sports
- To provide better platform for booking
- To develop user friendly application
- To save time than booking manually

1.5 OUTCOMES

Application

- Interesting and simple interface
- Easy to use and have high readability
- Optimized
- Can be used at anytime

Customer

- Easy to register as member
- Easy to browse for sport categories
- Easy to book court
- Easy to manage booking
- Can track booking
- Can collect points as rewards

Staff

- Easy to register profile
- Easy to manage booking

1.6 PROJECT DOMAIN

Since our project is about booking a sports court system, the most suitable domain for our project would be sports. Public sport facilities play an important role in promoting physical activity and participation in leisure sport activities. Our project will provide a better environment system for everyone to enjoy sports. With the rewards system and easier booking, this could attract more people to do sports. We also want to provide a simpler and easier product for non-sports people to take up on sports more and create a better, more healthy environment for all.

1.7 NEEDS, APPROACH, BENEFITS, COMPETITOR (NABC)

Elements	Description
Needs	The problem faced by the sports lovers is the difficulties to make booking
	for a court. The customers nowadays need to book either through call or
	whatsApp. Booking through a call is somehow easy but not many customers
	would prefer this approach. Other than that, there are no pictures of the court
	to be shown so customers might not know the size of the sports center. As
	for the booking through whatsApp, the response might be slow therefore, it

	might not be suitable for spontaneous customers who would like to book a court on the same day. Hence, this application might be the perfect solution for them whereby it fits the purpose for our potential clients.
Approach	Sportopedia is a web-based application in which it will help the sports lovers to book the court as well as manage their booking. The application will be user-friendly since the UI/UX design will be simple and interesting.
Benefits	This application will provide features for managing booking namely: add, update and delete. It would be better for customers since they do not need to contact the person in charge of the sports center if they suddenly decided to make changes to their booking. In addition, customers can track their booking in which they can track the details of the booking and make double confirmation of the booking. This tracking system will be beneficial to the customers as it can prevent accidental booking situations from happening. There would also be a reward system in this application whereby it may encourage customers to be more engaged in doing sports.
Competitor	 https://www.athleteforathletes.com/ https://www.courtsite.my/ To differentiate our application with our competitors, we will provide an optimized application. Other than that, our application would be more focusing on a sport center rather than many centers. This would prevent traffic during the customers bookings.

1.8 TEAM MEMBERS AND ROLES

No.	Name	Roles	Description
1.	Abdul Azim bin Abdul Malik	Project ManagerUI/UX Designer	 Planning and monitoring the project Decide the requirements of the application Design the interface for the application
2.	Wan Nur Atiqah binti Junaidi	Application developer	 Write coding for the application following the requirements Applying HTML, PHP, CSS and Laravel in the coding
3.	Nurul Syamira binti Amat Jifri	• UI/UX Designer	 Decide the requirements of the application Design the interface for the application

2 SPECIFIC REQUIREMENTS DIAGRAM

2.1 EXTERNAL INTERFACE REQUIREMENTS

2.1.1 User Interface Implementation

Logical characteristics: The GUI of the system is built using HTML, PHP, JavaScript and CSS on the Laravel 8 framework. This framework is selected as the choice for our project because the flexibility of the GUI would achieve an attractive interface. Sportopedia applied many pages using routing. Routing used to mapping between an URL and the functionality of a web server. With the right routing, the booking process would be much easier for the users. A navigation bar is visible at the top of the screen containing the main options to do on the application. This shows easy access for the users to instantly reach their required destination on the application such as profile, bookings and court.

Aspects:

- 1. When users key in the wrong username and password, the system will show which field contains error.
- 2. This system only be granted for members...
- 3. When the user has successfully registered, a pop up feature will show in the page.
- 4. When the user has successfully booked a court, a pop up feature will show in the page.

2.1.2 Hardware Interface Implementation

Hardware interfaces refer to the connection and communication of different devices. It also can refer to the interaction between the user and the computer via an input device such as the keyboard. Users can access an application using multiple hardware devices, better known as cross-platforms such as a laptop or personal computer with Windows 10 operating system for the best support. Besides, mobile applications also can be used with stable browsers such as Google Chrome or the phone's Internet Browser for mobile view. The system will write information directly to the user's database located in their own system account. The database on a cloud service that is used is Runcloud which is a network server that receives data by using basic networking protocols. All the system's information that was received and will be stored in the server's database.

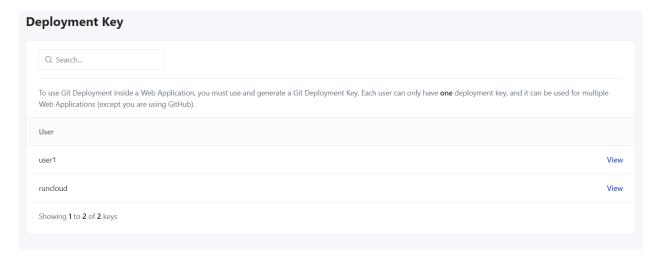
2.1.3 Software Interface Implementation

Name	Mnemonic	Version	Description	
Operating System	Windows 10	Home	Windows operating system is the best support to develop this application.	
Browser	Google Chrome	97.0.4692.71	To retrieve the content of the web page application, Google Chrome is used.	
Mobile	Android	7.1.0 - 7.1.2	With the correct versions	
Mobile	iOS	14.4	for mobile devices, this application could be accessed through mobile as well.	
Database	MySQL	15.0	To save the records, a MySQL database is chosen.	

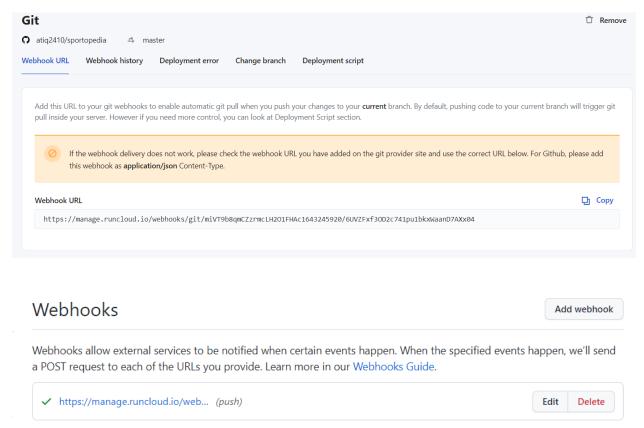
Programming Language	HTML	5.2	In order to create the website of the
Programming Language	РНР	7.4.25	application, HTML and PHP language are chosen.
Style Sheet Language	CSS	3.0	For the presentation of the website, CSS is used to make it more attractive and appealing.
Framework	Laravel	8.0	The main framework to be used which contains functionalities.

2.1.4 Runcloud Deployment

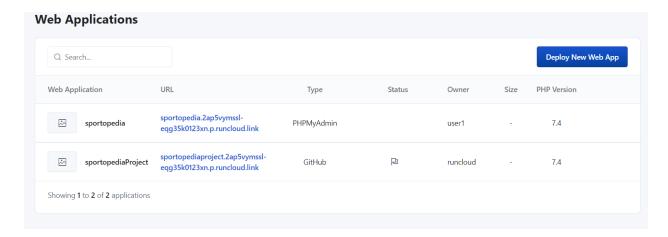
In this final application development project, we created the deployment process by using Runcloud. Using Runcloud will ease our access link by providing our own domain server link for the deployed website, despites the easy setup to import the folder of our project codings. The website is connected to RunCloud using GitHub. Deployment key is needed to connect RunCloud with GitHub.

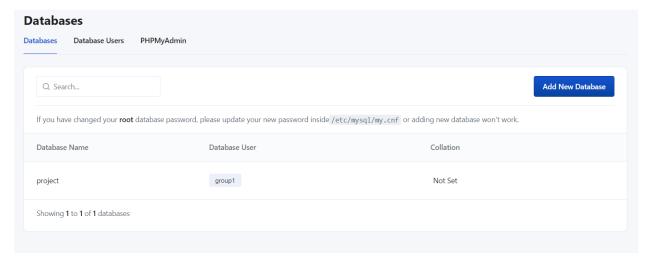


This website is connected to the repository link in GitHub in which this allows us to make changes to the application. As the deployment key is added to the git repository, the webhook url in GitHub is also set. This url keeps track of the commits being made to make sure the website is up to date like in the repository.



We have also created a database called 'project' in this runcloud. In order to let our website connect to the database, another deployment of a web app is required. Via the url created by RunCloud, we are able to access the database.



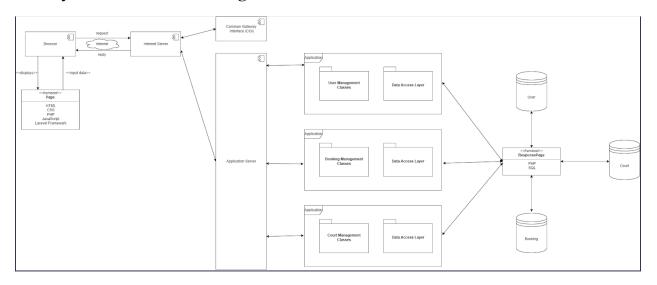


Project link: http://sportopediaproject2.2ap5vymssl-eqg35k0123xn.p.runcloud.link/

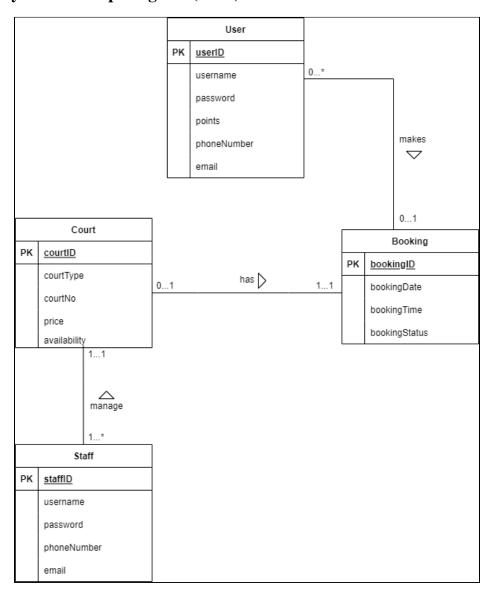
2.2 SYSTEM FEATURES

The system features including the system architecture design, entity relationship diagram, data flow diagram for the user and staff of the court booking system.

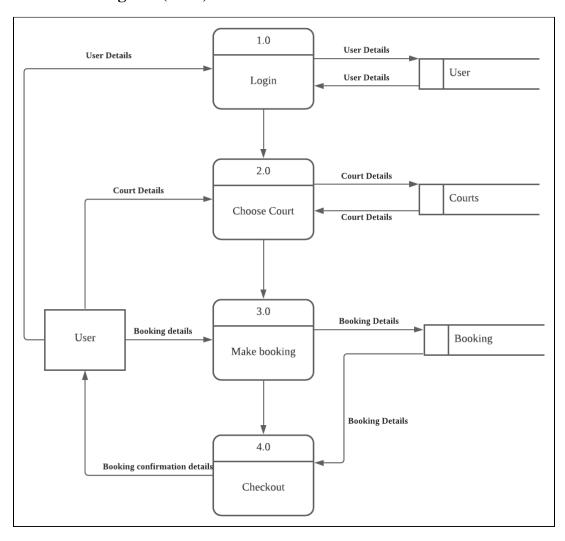
2.2.1 System Architecture Design



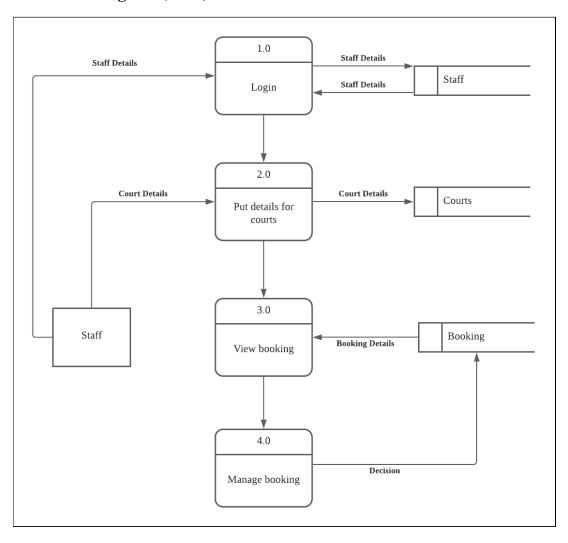
2.2.2 Entity Relationship Diagram (ERD)



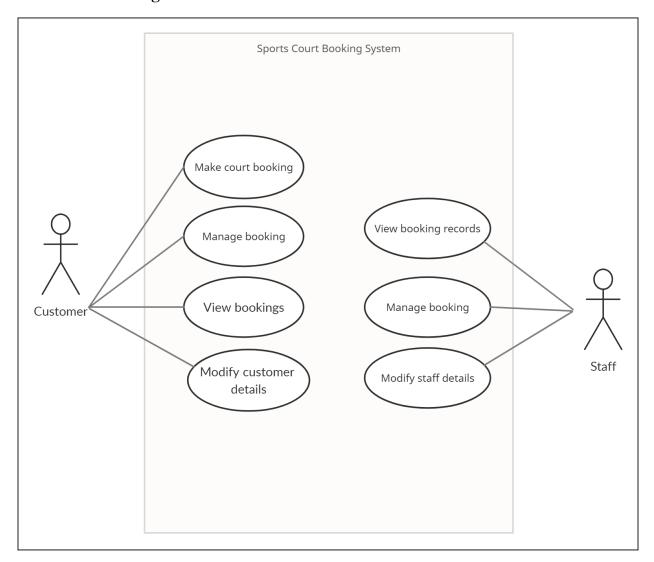
2.2.3 Data Flow Diagram (DFD) - User



2.2.4 Data Flow Diagram (DFD) - Staff



2.2.5 Use Case Diagram



2.2.6 Use Case Descriptions for Each Use Case

2.2.6.1 UC1: Use Case <Make Court Booking>

Use Case: Make Court Booking
ID: UC1
Actors: Customer
Pre-conditions Pre-conditions
Customer has active internet connection
2. Customer has registered
3. Customer has logged in
Normal Flow
1. Customer logged in to the system
2. If the customer clicks on Go To Courts, available courts will be displayed
3. If the customer clicks on Court ID, book a court page will be displayed
4. If the customer clicks on Submit, the booking will be saved
Alternative Flow
-
Exception
-
Related Requirements
-
Post Conditions
Booking made by the customer is stored in the system.

2.2.6.2 UC2: Use Case < Manage Booking>

Use Case: Manage Booking

ID: UC2

Actors: Customer

Pre-conditions

1. Customer has active internet connection

- 2. Customer has registered
- 3. Customer has logged in

Normal Flow

- 1. Customer selects "Bookings" to manage bookings.
- 2. If the customer selects on the pencil icon, the customer will redirect to the "Edit Bookings" page.
 - 2.1. Customer edits the details in the booking.
 - 2.2. Customer selects the "Edit" button to save the edited details.
 - 2.3. The system will show a pop up indicating the details have been saved.
 - 2.4. If the customer decides not to continue to edit the booking details, the customer can select on the "Cancel" button.
 - 2.4.1. The customer will be redirected to the "My Bookings" page.
- 3. If the customer selects on the trash bin icon, the system will delete the customer's booking.
 - 3.1. The system will show a popup to confirm deletion.
 - 3.2. If customer selects "Yes", the system will show a pop up indicating the deletion has been successful.

Alternative Flow
<u>-</u>
Exception
-
Related Requirements
, -
Post Conditions
Changes to the bookings are successfully made.

2.2.6.3 UC3: Use Case <View Bookings>

Use Case: View Booking				
ID: UC3				
Actors: Customer				
Pre-conditions 1. Customer has made a booking on the system				
Normal Flow 1. Customer clicks on "BOOKINGS" on the navigation bar at the top of the page. 2. A list of the customer's bookings is displayed.				
Alternative Flow				

1. Customer clicks on "MY BOOKINGS" on their profile page.

2.	A	list of	the	customer'	S	book	ings	is	displayed	1.
				• • • • • • • • • • • • • • • • • • • •	_	0001				

Exception

-

Related Requirements

-

Post Conditions

The customer can view and be reminded of bookings details that they made.

2.2.6.4 UC4: Use Case < Modify Customer Details>

Use Case: Modify Customer Details

ID: UC4

Actors: Customer

Pre-conditions

- 1. Customer has registered
- 2. Customer has logged in

Normal Flow

- 1. Customer clicks on "PROFILE" to view their profile
- 2. Customer clicks on "EDIT" to update their profile
- 3. Customer will redirect to the "Edit Profile" page.
 - 3.1. Customer clicks the "UPDATE" button to save the edited details.
 - 3.2. The system will show a pop up indicating the details have been saved.
 - 3.3. If the customer decides not to continue to edit the profile details, the

customer can select on the "CANCEL" button.
Alternative Flow
Exception
Related Requirements
Post Conditions
Customer successfully make changes on customer profile.

2.2.6.5 UC5: Use Case < View Booking Records>

	Use Case: View Booking Records
ID: UC4	
Actors: Staff	

Pre-conditions

- 1. Staff has active internet connection
- 2. Staff log in to the system

Normal Flow

- 1. Staff selects "View Bookings" to view the bookings made by the customers.
- 2. Staff will be redirected to the "View Bookings" page.

3. A list of customer bookings are displayed.

Alternative Flow

- 1. Staff selects "Bookings" to view the bookings made by the customers.
- 2. Staff will be redirected to the "View Bookings" page.
- 3. A list of customer bookings are displayed.

Exception

-

Related Requirements

-

Post Conditions

The staff can view the bookings records.

2.2.6.6 UC6: Use Case <Manage Bookings>

Use Case: Manage Booking

ID: UC5

Actors: Staff

Pre-conditions

- 1. Staff has active internet connection
- 2. Staff log in to the system
- 3. Staff selects on the "View Bookings" or "Bookings"

Normal Flow			
1. A list of customer bookings are displayed.			
2. If the staff selects on the bin icon, the system will delete the booking.			
Alternative Flow			
-			
Exception			
-			
Related Requirements			
-			
Post Conditions			
Staff successfully make changes on customer bookings.			

2.2.6.7 UC7: Use Case < Modify Staff Details>

Use Case: Modify Staff Details
ID: UC6
Actors: Staff
Pre-conditions
1. Staff has logged in
Normal Flow

- 1. Staff clicks on "PROFILE" to view their profile
- 2. Staff clicks on "EDIT" to update their profile
- 3. Staff will redirect to the "Edit Profile" page.
 - 3.1 Staff clicks the "UPDATE" button to save the edited details.
 - 3.2 The system will show a pop up indicating the details have been saved.
 - 3.3 If the staff decides not to continue to edit the profile details, the staff can select on the "CANCEL" button.

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Exception

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Related Requirements

-

Post Conditions

Staff successfully make changes on staff profile.

3 USER INTERFACE DESIGN

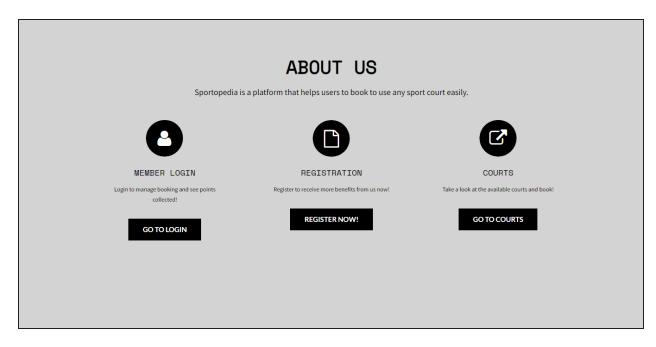
3.1 Overview of User Interface

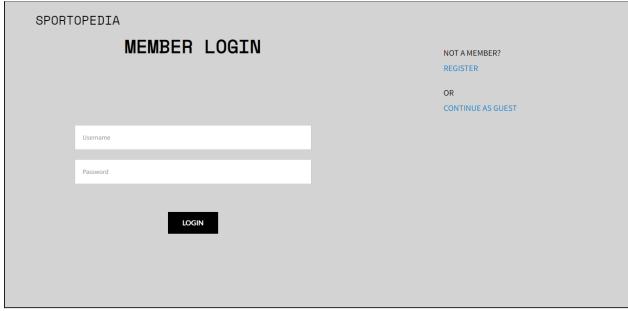
The system will start off with the welcome page. Customers can either choose "Login", "Register" or "Book Now". These interfaces mainly focus on customers who are already registered and log in to the system. Once they logged in, they will be redirected to their profile page. Their details will be shown and the most important part is the points. CRUD is being implemented in this system whereby customers can make their bookings, view their bookings, update their bookings and delete their bookings.

On the staff side, they can manage their customer bookings by updating the status of the bookings. Firstly, the staff is required to log in and they will be redirected to their profile page. View booking can be made and they are able to manage their customer bookings there.

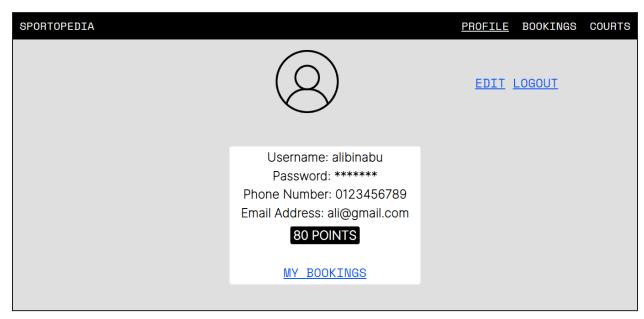
3.2 Screen Images

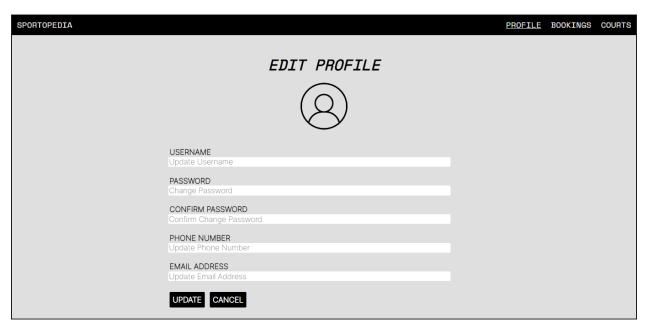


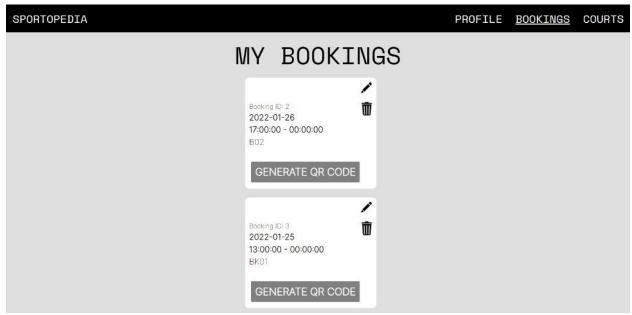


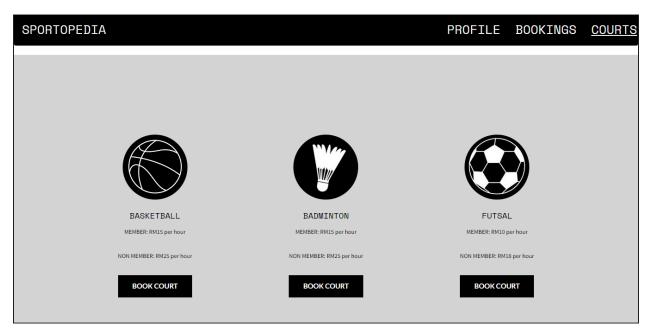


SPORT	OPEDIA	
	REGISTER	ALREADY A MEMBER? LOGIN
	Username	
	Phone Number	
	Email Address	
	Create Password	
	Confirm Password	
	REGISTER	





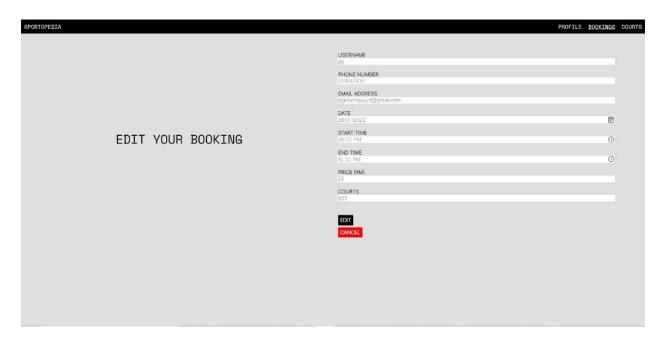


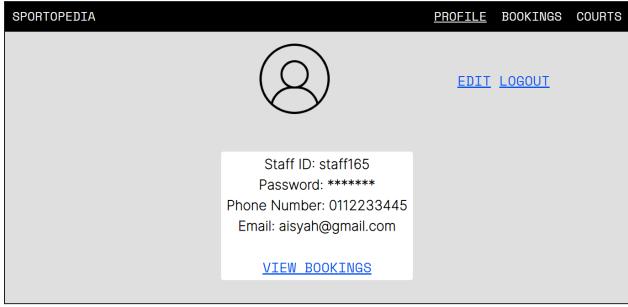


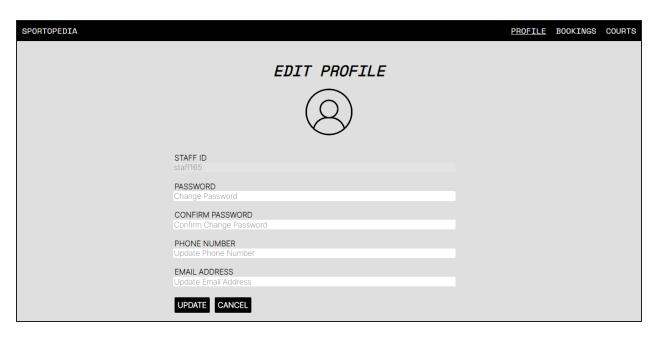


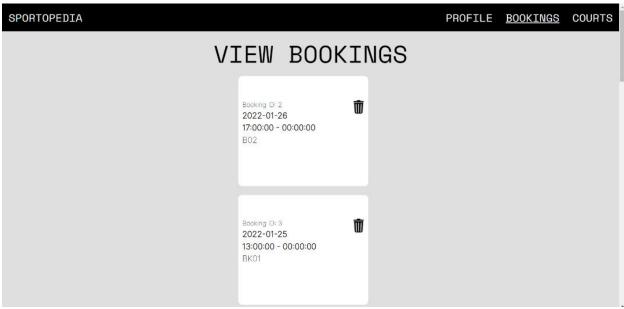












CODE VERSIONING

The first version of the coding is in the form of the progress update. We focused on

the coding for the user interface using HTML and CSS without the Laravel Framework.

All of the features are there however it has not completely functioned well yet.

As for the second version of the coding, we have proceeded to migrate the user

interfaces into the Laravel Framework. A few changes have been made especially for the

routing part. We figured out that in order to redirect a page to another page, we need to

implement routing into web.php.

When we reached the third version of the coding, we successfully connected the

coding with the database. We also have started implementing PHP in our coding in order

to connect with the database. The database we used is PhpMyAdmin and we tested the

database through the localhost. Later, we will migrate it through the cloud.

The final version of the code has been successfully migrated into the cloud.

GitHub is used in order to deploy our application to the cloud. We did some changes on

the env file and committed it. Therefore, our link is now available in the cloud.

Project link: http://sportopediaproject2.2ap5vymssl-eqg35k0123xn.p.runcloud.link/

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